

### **REMARKS**

This Amendment is filed in response to the Office Action mailed October 6, 2003. Applicant initially note with appreciation the Examiner's continued thorough examination of the application. Applicant also notes with appreciation the courtesies extended by the Examiner to Applicant's counsel in the recent telephone interview. With regard to the Office Action, Applicant has further amended independent Claim 1. Applicant first submits that the amendments were not made in light of the prior art, but were instead made to clarify the invention. Applicant further respectfully submits that amended independent Claim 1 is patentable over the cited references, and as such, requests that the Examiner reconsider the claims in light of the remarks below.

#### **I. The Claim Meet the Written Restriction**

On page 2, the Office Action rejects Claims 1-6 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Specifically, the Office Action alleges that the specification does not disclose that the multi-power source produces a single wavelength optical signal. Applicant disagrees with this point and respectfully submits that these recitations are met by the specification.

However, to expedite examination of the application, Applicant has amended Claim 1 in light of this rejection. This amendment was made to clarify the invention and not made to define over the cited references. Claim 1 now recites that the system encodes different value bits of each word into different power levels of a single signal having  $m$  optical power levels. This recitation is fully supported by the specification. For example, Figure 2 of the application discloses encoded of different value bits into different power levels of a signal. Further, at page 8, lines 10-26, the specification discloses an example where four bits are encoded into different power levels of a signal, which is received on the other end of the communication link and decoded back into the four bits.

Applicant respectfully submits that amended independent Claim 1 is supported by the specification.

## **II. The Claims Are Patentable**

With regard to the Office Action, all of the claims have been rejected as either anticipated under 35 U.S.C. § 102(b) or obvious under 35 U.S.C. § 103(a) in light of U.S. Patent No. 5,801,860 to Yoneyama. Applicants respectfully disagree with these rejections.

The claimed invention relates to a data communications link having a transmitter station that includes a multi-power level optical source connected to receive data words of  $n$  digital bits and arranged to encode different value bits of each word into different power levels of a signal having  $m$  optical power levels (i.e., a multi-power-level optical signal), which is then output by the transmitter. The output of the transmitter is transmitted along a communications path to a data receiver station that includes a data decoding receiver arranged to receive and decode the multi-power-level optical signal into  $n$  bit digital words.

In contrast to the claimed invention, the '860 Yoneyama patent discloses a wavelength division multiplexing transmission system. This is a distinct system from the multi-power-level system of the claimed invention, in that the individual bits are encoded into different signals, not into different power levels of the same signal, as is recited in independent Claim 1.

In particular, as is well known, the transmitter of a wavelength division multiplexing system, such as the one disclosed in the '860 Yoneyama patent, includes a plurality of individual optical sources, each of which is operable to transmit light at a different wavelengths from other such sources. Data is carried in each of the different wavelength signals. In order to ensure that each channel of the multiplexer has the same power level, the system of the '860 Yoneyama patent has a feedback arrangement.

The system of the '860 Yoneyama patent does not, however, include a data transmitter station having a multi-power-level optical source arranged to encode the bits of each word into one of  $m$  optical power levels of a single optical signal, as is recited in amended independent Claim 1. Instead, the bits are encoded into different optical signals in different channels. Further, the bits all reside at the same power level. Specifically, each channel of the transmitter has a single, but controllable, power level, not multiple power levels. As noted at column 1, lines 31 to 39 of the '860 Yoneyama patent, to control the power level in each of the output channels, a controllable power unit is provided. This power unit is not adapted to encode the bits

of a message into one of  $m$  optical power levels. Instead, it is provided merely to allow control of the base power level, such that all channels will have the same power level.

Likewise, the system of '860 Yoneyama patent does not include a data receiver station including a data decoding receiver arranged to receive and decode the multi-power level single signal into  $n$  bit digital words, as is recited in independent Claim 1. It is noted that the Office Action states that this is inherent in Figure 6 of the '860 Yoneyama patent, but given the comments relating to the transmitter of the '860 Yoneyama patent, it will be appreciated that no such receiver would be necessary because data is not encoded at the transmitter end into the different power levels of a signal.

Further, Applicants note that the communications link in which the claimed invention is embodied is fundamentally different from that of the '860 Yoneyama patent. In the present, data is encoded in a single wavelength, multi-power-level signal. In the '860 Yoneyama patent, data is encoded in a plurality of different wavelength signals, which signals all have the same power level. There is no teaching in the '860 Yoneyama patent that would lead a skilled person to the communication link as defined in amended Claim 1. As the '860 Yoneyama patent neither teaches or suggests the transmitter, receiver, or communications link of the claimed invention, Applicants respectfully submit that the independent Claim 1, as well as the claims that depend therefrom is patentably over the cited reference.

### CONCLUSION

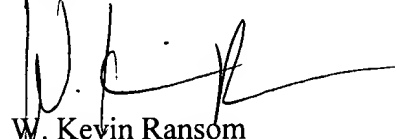
In light of the amendments to Claim 1 and the remarks above, Applicants respectfully submit that the case is now in condition for allowance. It is therefore requested that a Notice of Allowance be issued. The Examiner is encouraged to contact Applicant's undersigned attorney to resolve any remaining issues in order to expedite examination of the present application.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required

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therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

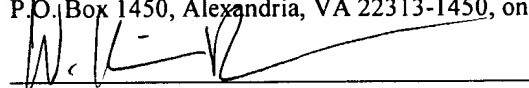


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**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Non-Fee Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on February 6, 2004

  
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